1. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 13 \div 17 * 20 - (14 * 8)$$

A. $[-228.35, -218.35]$

B. $[-131.29, -122.29]$

C. $[-111.04, -105.04]$

D. $[112.96, 115.96]$

E. None of the above

2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{19044}{36}}$$

A. Whole

B. Not a Real number

C. Irrational

D. Integer

E. Rational

3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{28900}{289}}$$

A. Integer

B. Rational

C. Irrational

D. Not a Real number

E. Whole

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{-20}{-12} + 64i^2$$

   A. Pure Imaginary

   B. Nonreal Complex

   C. Not a Complex Number

   D. Rational

   E. Irrational

5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(10 + 2i)(4 + 3i)$$

   A. $a \in [42, 50]$ and $b \in [16, 26]$

   B. $a \in [30, 37]$ and $b \in [35, 43]$

   C. $a \in [30, 37]$ and $b \in [-43, -36]$

   D. $a \in [39, 44]$ and $b \in [5, 7]$

   E. $a \in [42, 50]$ and $b \in [-23, -19]$

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{63 - 33i}{4 - 5i}$$

   A. $a \in [416, 417.5]$ and $b \in [3.5, 5.5]$

   B. $a \in [9.5, 10.5]$ and $b \in [181.5, 184]$

   C. $a \in [9.5, 10.5]$ and $b \in [3.5, 5.5]$

D. $a \in [1, 4]$ and $b \in [-11.5, -10.5]$

E. $a \in [14.5, 16.5]$ and $b \in [5.5, 7.5]$

---

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 - 4i)(-6 + 2i)$$

A. $a \in [52, 58]$ and $b \in [-9.4, -7.8]$

B. $a \in [46, 50]$ and $b \in [40.42, 42.03]$

C. $a \in [59, 64]$ and $b \in [-6.19, -5.59]$

D. $a \in [59, 64]$ and $b \in [4.87, 7.82]$

E. $a \in [46, 50]$ and $b \in [-42.35, -41.86]$

---

8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-18 + 77i}{6 - 3i}$$

A. $a \in [-339.5, -338]$ and $b \in [8.5, 10.5]$

B. $a \in [-4, -2]$ and $b \in [-26.5, -25]$

C. $a \in [-9, -6]$ and $b \in [8.5, 10.5]$

D. $a \in [2, 3]$ and $b \in [11, 12]$

E. $a \in [-9, -6]$ and $b \in [407.5, 409]$

---

9. Simplify the expression below and choose the interval the simplification is contained within.

$$20 - 2 \div 6 * 12 - (11 * 4)$$

A. $[-27.1, -23.8]$

B. $[19, 21.7]$

C. $[61.4, 65.5]$

D. $[-28.6, -25.1]$

E. None of the above

---

10. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{450}{5}} + \sqrt{132}i$$

A. Not a Complex Number

B. Rational

C. Pure Imaginary

D. Nonreal Complex

E. Irrational